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EXAMINER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/766,448
Filing Date: January 27, 2004
Appellant(s): SUISSA ET AL.

Ronald O. Neerings

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed April 27, 2009 appealing from the Office action mailed April 15, 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

None

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 2 – 8 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. The claims are not compliant to none of the two above requirements.

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

(10) Response to Argument

A. Argument:

Re claims 2 and 5, the Applicants traverses Examiner's determination that "the transformation of signal to a different state or thing is not the same as transforming a physical article or material to a different state" (Office Action dated 04/15/2009). Applicants respectfully point out that Examiner agrees above that a "*transformation of a signal to a different state or thing*" is occurring in Claims 2 & 5. Applicant's submit that "transforming a signal to a different state or thing is the same as transforming a physical article or material to a different state". Applicant's further submit that Examiner cites no scientific evidence or case law support for his determination (meaning no prima facie case supporting his determination), where Examiner's determination is supposition not supported by fact - little more than improper hindsight reconstruction.

A. Response:

Claims 2 and 5 recite the step of "subtracting said DC offset estimate from said input **signal** to yield a frequency compensated output **signal**". Examiner submits that correcting or modifying or improving the quality of a signal does not transform the signal to a different state. The signal still remains a signal. For example changing a number to a different number is not transformation of a physical article or material to a different state because simply it still remains a number. Therefore, the transformation of signal to

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a different state or thing is not the same as transforming a physical article or material to a different state.

B. Argument:

The Applicants traverses Examiner's determination that "a signal itself does not have a physical embodiment but it is information data acted on" (Office Action dated 04/15/2009). Examiner seems to be misconstruing the term "signal" to be nothing more than abstract "data". Applicants respectfully point out that in the step limitation "an input signal wherein frequency offsets have been translated to DC offsets" the "input signal" has direct current (DC) offsets. As such, the "input signal" is not, and cannot be construed to be, nothing but "data", as determined by Examiner. Subsequent to the above, the additional step of: "subtracting said DC offset estimate from said input signal to yield a frequency compensated output signal", sets forth that the direct current (DC) offset estimate is subtracted from the "input signal" to yield a "frequency compensated output signal". Similarly, a "frequency compensated output signal" is not, and cannot be construed to be, nothing but "data", as determined by Examiner. Accordingly, both the "input signal" and the "frequency compensated output signal" both have physical embodiments with the "frequency compensated output signal" being the result of the "transformation of underlying subject matter (e.g., the "input signal") to a different state or thing (e.g., the "frequency compensated output signal"). Moreover, certainly a machine of some sort would be required to subtract direct current (DC) offsets from said input signal to yield a frequency compensated output signal.

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B. Response:

Examiner submits that Applicants appear to give weight to the “input signal”, “frequency offset” and “DC offset” in order to meet the second requirement of § 101 where the statutory “process” under 35 U.S.C. 101 must “(2) *transform underlying subject matter (such as an article or material) to a different state or thing*”. However, the claims need to fall within one of the four statutory categories of invention. It should be reminded that a “signal” is an abstract idea and changing or modifying the signal to a different form is not statutory. Subtracting one signal from another signal is an abstract algorithm and does not comply with the requirement of 35 U.S.C. § 101. Furthermore, Examiner has not identified that the method claims of 2 and 5 may contain an inherent machine or an apparatus that may perform the process. A machine is not necessarily required to subtract one signal (direct current (DC) offsets) from another signal (said input signal to yield a frequency compensated output signal). Therefore, the method may be performed by a person and can be considered to be a mental process which does not meet the first requirement§ 101 where the statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus).

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C. Argument:

Appellants further traverse the following further determinations by Examiner in the Office communication of 04/27/2009: Examiner submits that whether the input signal is a DC Offset, data or any other signal representation, any transformation or translation from one signal to another does not transform to a different state (i. e. it still remains a signal which is a form of energy)(Office communication dated 04/27/2009, page 2, lines 7-8). Examiner's determination above is preposterous. Examiner's reasoning seems at odds with the laws of physics. For example, a signal having a DC offset of 1 volt is at a different state than a signal having a DC offset of 100 volts. Therefore, if a signal having a DC offset of 1 volt is transformed (Examiner admits that the signal is "transformed") into a signal having a DC offset of 100 volts, the result signal having a DC offset of 100 volts is at a different "state" that it was before. Indeed, Examiner's determination would even deny that two signals having different energy rates would be at different "states" since both are "a form of energy". Further, Examiner's determination does not consider the change of one form of energy to another to be a "transformation to a different state"! Thus, burning wood to generate heat would not be a "transformation to a different state" under Examiner's reasoning since both are forms of energy! Examiner's determination is supposition not supported by fact - little more than unsupported, improper, hindsight reconstruction.

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C. Response:

Examiner submits as discussed on A.Response, correcting or modifying or improving the quality of a signal does not transform the signal to a different state. The signal still remains a signal. For example changing a number to a different number is not transformation because simply it still remains a number. Therefore, the transformation of signal to a different state or thing is not the same as transforming a physical article or material to a different state. A signal having a DC offset of 1 volt is different than a signal having a DC offset of 100 volts. There is a difference of 99 volts and that is just changing a number value. Therefore, the signal having a DC offset of 1 volt is not at a different state than a signal having a DC offset of 100 volts. Furthermore, the result signal having a DC offset of 100 volts is not at a different "state" than it was before because everything occurred in the DC offset domain. Applicant's example, where the burning wood generates heat is a "transformation to a different state" would be the same as "transforming" one signal to another signal form is inadequate. Wood is a material that is transformed to another state and that is heat, but does not remain wood as opposed to the signal that remains a signal. The definition of a material is the substance of which a thing is made, for example wood. The definition of an article is an individual thing or element of a class, a particular object or item: an article of clothing; articles of food. Therefore, an article or a material cannot be a signal because a signal is a form of electromagnetic energy, cannot be observed by the human eye and does not have a physical manifestation.

D. Argument:

The Applicants traverses Examiner's determination that the input signal wherein the frequency offsets have been translated to DC offsets occurs before the signal has been received and is not tied to the claim (Office Action dated 04/27/2009). Examiner's determination fails to consider all of the words of the claim. The input signal has frequency offsets that have been translated to DC offsets.

D. Response:

Claims 2 and 5 recite of the step of "*receiving an input signal wherein frequency offsets have been translated to DC offsets*". Examiner submits that the received input signal as claimed is already in the DC offset domain and the claim does not require the transformation from a frequency offset domain to a DC offset domain.

E. Argument:

The Applicants traverses Examiner's determination that the claims do not recite of transforming the frequency offsets to a dc offset (Office communication dated 04/27/2009). Examiner has failed to consider the claim limitations, "subtracting said DC offset estimate from said input signal to yield a frequency compensated output signal", as required by Claims 2 and 5.

E. Response:

As discussed above in (D). Response, Claims 2 and 5 recite of the step of *“receiving an input signal wherein frequency offsets have been translated to DC offsets”*. Examiner submits that the received input signal as claimed is already in the DC offset domain and the claim does not require the transformation from a frequency offset value to a DC offset value. The claim limitation, "subtracting said DC offset estimate from said input signal to yield a frequency compensated output signal" has nothing to do with translating an input signal with frequency offset to a signal with DC offset. As it is clearly recited, the DC offset is subtracted from the input signal to yield a frequency compensated signal. As discussed in (B) Response this is a mental process that can be accomplished by hand. Subtraction is a mathematical process that can either be achieved by hand or by a calculator used by a person by entering the values. Therefore, a machine is not necessarily required to subtract one signal (direct current (DC) offsets) from another signal (said input signal to yield a frequency compensated output signal).

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Aristocratis Fotakis/

Examiner, Art Unit 2611

Conferees:

/Chieh M Fan/

Supervisory Patent Examiner, Art Unit 2611

/Shuwang Liu/

Supervisory Patent Examiner, Art Unit 2611